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ABSTRACT

Vocational education is an important component of the bridge leading from school to employment for special needs youth. Studies indicate that special needs youth are not being adequately prepared for work. Unemployment and underemployment of special needs youth seem to stem from three causes: lack of interpersonal skills, lack of job-related academic skills, and lack of specific vocational skills. Besides vocational education, the other major components of the school-to-work transition are special education, vocational rehabilitation, Job Training Partnership Act agencies, and developmental disabilities agencies. The services available from these agencies, together with information from studies on the employment preparation of special needs youth, should be carefully considered in determining the role of vocational education in the transition process. Suggested roles include (1) assisting with assessment of interests and skills; (2) providing a setting for occupational exploration; (3) assisting with basic academic skills instruction; (4) developing job-related interpersonal skills; (5) training in clusters of vocationally related skills; and (6) providing work experiences. Proposed program models for delivering instruction in interpersonal, basic academic, and specific vocational skills promote a comprehensive approach to address each skill area. Typical forms include a separate vocational special needs class, regular vocational classes with support materials, regular vocational classes with resource teachers, and regular vocational classes in cooperation with the special education classroom. A nine-page list of references concludes the document. (SK)

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Information Series No. 309

Transition, Special Needs, and Vocational Education

Patricia L. Sitlington
Iowa Department of Education

U.S. DEPARTMENT OF EDUCATION
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Foreword

The Educational Resources Information Center Clearinghouse on Adult, Career, and Vocational Education (ERIC/ACVE) is one of 16 clearinghouses in a nationwide information system that is funded by the Office of Educational Research and Improvement, U.S. Department of Education. One of the functions of the Clearinghouse is to interpret the literature in the ERIC database. This paper should be of particular interest to teachers and administrators in vocational and special education; to agencies involved in vocational rehabilitation, Job Training Partnership Act, and developmental disabilities programs; and to employers cooperating with schools to serve special needs youth.

The profession is indebted to Patricia L. Sitlington of the Special Education Bureau, Iowa Department of Education, for her scholarship in the preparation of this paper. Dr. Sitlington was formerly Associate Professor in the Departments of Special Education and Adult and Occupational Education at Indiana University. While there she also served as reference faculty in Vocational Special Needs to the Transitional Autistic Program and as vocational special needs consultant/research and development coordinator for Vocational Education Services. Dr. Sitlington serves on the editorial board of the *Journal for Vocational Special Needs Education*, among other professional service activities, and has published extensively in the areas of vocational and special education.

The National Center wishes to acknowledge the leadership provided to this effort by Dr. Robert E. Taylor, recently retired Executive Director. Recognition is also due to L. Allen Phelps, Associate Professor, University of Illinois at Urbana-Champaign; Allen A. Mori, Dean of the College of Education, Marshall University; and to Margaretha Vreeburg Izzo, Program Associate, and Robert D. Bhaerman, Research Specialist 2, the National Center for Research in Vocational Education; for their critical review of the manuscript prior to publication. Wesley Budke and Susan Imel coordinated the publication's development. They were assisted by Sandra Kerka and Cheryl Harrison. Jean Messick, Clarine Cotton, and Sally Robinson typed the manuscript; Janet Ray served as word processor operator. James Bow of the National Center's Editorial Services edited the paper.

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Executive Summary

Vocational education is an important component of the bridge leading from school to employment for special needs youth. It provides skills and concepts students need in order to obtain and keep a job. However, as the workplace changes, it is necessary for those involved in vocational education for special needs youth to reexamine and change their programs to keep the bridging effect strong.

Numerous studies have reported on the extent of vocational adjustment that special needs youth have achieved. Different reports give figures between 50 and 80 percent as the number of disabled persons of working age who are not employed. The jobless rate for disadvantaged youth is little better.

Several studies have focused on specific special needs problems and how they appear to affect youth in the labor market. The findings from these reports include the following:

- Special needs individuals find employment at approximately the same rate as their age peers.
- Employment of special needs individuals tends to be part-time, minimum wage, and entry level.
- Graduates of special education programs receive little vocational counseling while in school.
- Special needs individuals usually find jobs through family or friends.

Unemployment and underemployment of special needs youth seem to stem from three causes: lack of interpersonal skills, lack of job-related academic skills, and lack of specific vocational skills. A delivery system that will teach these skills must be developed.

A lack of interpersonal skills impedes special needs youth as they interview for jobs, accept work-related criticism, or explain work-related problems to a supervisor. Many studies indicate that employers reject job applicants most often for reasons related to interpersonal skills.

Job-related academic skills are also relevant to success in the labor market. Mathematics, communications, and reasoning skills are the three often mentioned. Findings emphasize that basic academic skill instruction should be based on a workplace context.

Findings are mixed on the need for training in advanced vocational skills. The emergence of technology as a major force in the workplace makes vocational skills important, but many

researchers warn that programs should not sacrifice interpersonal skills and basic academic skills training to advanced vocational skills. At present, most special needs individuals do not receive advanced vocational training, while those that do often are trained for blue-collar and social service jobs. Studies are finding, increasingly, that work experience, full- or part-time, paid or unpaid, is important to future employment success.

Vocational education is only one component of the bridge between school and work. The other major ones are special education, vocational rehabilitation, Job Training Partnership Act agencies, and developmental disabilities agencies.

Data indicate that special needs youth are not being adequately prepared to enter the workplace. Based upon the research and the roles of various agencies that participate in the transition process, several roles are suggested for vocational education:

- Assisting with assessment of the learner's interests, interpersonal skills, job-related academics, and vocational skills
- Providing a setting for occupational exploration
- Assisting with instruction in basic academic skills
- Providing experience that develops job-related interpersonal skills
- Training in clusters of vocationally related skills
- Providing work experiences
- Training in specific vocational skills

Special needs youth remain underrepresented in vocational education programs. One reason may be that economic, social, and psychological influences affect occupational desires long before students pursue vocational education. Also, disadvantaged students are often screened into low-level programs, and they stay there.

Vocational educators may be another part of the problem. In general, vocational and special educators and other partners in transition communicate infrequently with each other. Vocational educators are sometimes reluctant to mainstream special needs youth into their classes. These problems can be overcome, however, and recent research shows promising results.

Many authors have proposed program models that would deliver instruction in interpersonal, basic academic, and specific vocational skills to special needs youth. The proposed models largely promote a comprehensive approach to vocational training that will address each of these three skills areas. Typical forms that special needs programs have taken in the past are—

- a separate vocational special needs class,
- regular vocational education classes with support materials,
- regular vocational education classes with resource teachers, and
- regular vocational education classes with support from the special education classroom.

The roles proposed for vocational education hold implications for personnel preparation, research, policy setting and planning, and programming.

Information on transition for special needs youth may be found in the ERIC system using the following descriptors: *Disabilities, Disadvantaged, *Education Work Relationship, *Employment Potential, *Job Skills, Resource Room Programs, Secondary Education, Special Classes, Special Education Teachers, *Transitional Programs, *Vocational Adjustment, Vocational Education, Vocational Education Teachers, Vocational Rehabilitation, Youth. Asterisks indicate descriptors having particular relevance.

Introduction

The transition of handicapped youth from school to work and adult life has been identified as a major priority of the Office of Special Education and Rehabilitative Services (OSERS) (Will 1984). This transition is also critical for disadvantaged youth and other individuals with special needs. Webster's dictionary defines transition as a "passage from one place, state, stage of development, type, etc., to another." Wehman (1984) defines transition as

> a carefully planned process, which may be initiated either by school personnel or adult service providers, to establish and implement a plan for either employment or additional vocational training of a handicapped student who will graduate or leave school in three to five years. Such a process must involve special educators, vocational educators, parents and/or the student, and an adult service system representative, and possibly an employer. (pp. 23-24)

The OSERS view of transition involves three major components: (1) the high school foundation, (2) employment opportunities, and (3) the bridge between these two components. This bridge may involve the provision of no special services, time-limited services, or ongoing vocational support throughout the individual's life. If this transition is to be successful, vocational education must play a major role in laying the foundation for employment and cooperating with other disciplines in building the bridge from this foundation to the world of work and adult life.

Halpern (1985) suggested a revised model of transition. In his model, the end result is community adjustment, which encompasses the residential environment and social and interpersonal networks, as well as employment. In addition, he has modified the bridges to this community adjustment to include generic services, time-limited special services, and ongoing special services.

The focus of this monograph is on the role that vocational education should play in the transition process for special needs youth. Although all aspects of adjustment to adulthood are critical, this monograph will focus specifically on the transition to employment. In order to delineate the role of vocational education, it is important to determine how well special needs youth have done with regard to employment and to identify the types of skills needed for obtaining and maintaining this employment. Thus, this monograph will (1) briefly review recent studies of the vocational adjustment of special needs youth; (2) identify the types of skills needed for successful transition to the world of work; (3) identify the disciplines involved in the transition process and the services they have to offer; (4) outline possible roles that the field of vocational education might play in this process and how vocational educators can work most effectively with other disciplines; and (5) discuss the implications of these roles for personal preparation, research, policy development, and programming activities. For the purposes of this monograph, vocational education will be defined as

> organized educational programs which are directly related to the preparation of individuals in paid or unpaid employment in such fields as agriculture, business occupations, home economics, health occupations, marketing and distributive occupations, technical and emerging occupations, modern industrial and agriculture arts, and trades and industrial occupations, or for additional preparation for a career in such fields, and in other occupations, requiring other than a baccalaureate or advanced degree and vocational student organization activities as an integral part of the program. (Carl D. Perkins Act 1984, p. 55)

The primary special needs populations discussed in this monograph will be handicapped and disadvantaged youth, although a number of the programming suggestions and models are applicable to the other special needs populations, such as adults in need of training and retraining, single parents and homemakers, participants in programs designed to eliminate sex bias and stereotyping, and criminal offenders in correctional institutions. As the term is used in this monograph, handicapped students are "individuals who are mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, or other health impaired persons, or persons with specific learning disabilities, who by reason thereof require special education and related services, and who, because of their handicapping condition, cannot succeed in the regular vocational education program without special education assistance" (Carl D. Perkins Act 1984, p. 53). The term "disadvantaged" refers to "individuals (other than handicapped individuals) who have economic or academic disadvantages and who require special services and assistance in order to enable them to succeed in vocational education programs. Such term includes individuals who are members of economically disadvantaged families, migrants, individuals who have limited English proficiency and individuals who are dropouts from, or who are identified as potential dropouts from, secondary school."

Vocational Adjustment Studies Involving Special Needs Youth

Statistics show that between 50 and 80 percent of disabled adults of working age are jobless (McNeil 1982; U.S. Commission on Civil Rights 1983). In only a small percentage of cases is this unemployment due to inability to perform a regular, full-time job (Berkeley Planning Associates 1981). Handicapped people who are able to find work are more than twice as likely as the non-handicapped to work part time (Wolfe 1980). Additional data (U.S. Department of Education 1983) indicate that the handicapped adults who do work average over $2,000 less in wages annually than nondisabled co-workers. The cost of dependency among unemployed persons with disabilities is over $115 billion per year (Razeghi and Davis 1979). Of the 30 million disabled in the United States, over 11 million are potentially employable; yet only 4.1 million are employed (Ianacone and Tilson 1983).

Statistics are not much better for disadvantaged youth. Leroy (1983) stated that the unemployment rates for 16- to 21-year-olds are two to two and one-half times the overall population's unemployment rate, and that minority youth unemployment is anywhere from two to four times that of white youth. In addition, Leroy found that there is a large but undetermined number of "discouraged workers," especially among minority youth, who do not show up in labor statistics because they have quit the labor market. This unemployment rate for youth has been gradually rising for 20 years, and the problem is increasingly severe for minority youth in urban areas, whose unemployment (40 to 60 percent) is "a precursor to life-long difficulty in landing a job" (de Lone 1981, p. 6).

Adjustment Studies of Specific Special Needs Populations

A number of follow-up studies have been conducted on special needs youth. The majority of studies conducted on those individuals classified as mentally retarded were reported in the period of the 1950s through the 1970s (Cassidy and Phelps 1955; Dinger 1961; Peck and Stephens 1968; Peterson and Smith 1960; Porter and Milazzo 1958). These studies found that a large percentage of individuals who had been classified as mentally retarded had made satisfactory adjustments in competitive employment. The vast majority of the individuals, however, worked at unskilled or semiskilled occupations, with the largest pool of jobs in the unskilled areas. In addition, these studies found that economic conditions had an important effect on this vocational adjustment, with the retarded being the last to be hired and the first to be fired.

Two specific studies were conducted more recently. Halpern (1973) followed the graduates of special education vocational programs in the state of Oregon. He found that (1) when the level of community unemployment was high, the mentally retarded could not find a job; (2) the mentally retarded were not necessarily the first to be fired, once they were hired; and (3) mentally retarded

students in vocational programs had a good chance of a job at any time. Brolin et al. (1975) followed 80 special education graduates randomly selected from programs in the Minneapolis public schools over the preceding 11 years. They found poor overall vocational adjustment for all, but stated that those who had received some work experience and vocational training were better adjusted than those who had received no such training.

Little information is available on individuals previously identified as learning disabled (LD) who have left school and are now functioning as adults. Moreover, much of these data are based on individuals formerly seen in medical or child guidance clinics for childhood learning and/or behavioral problems (Horn, O'Donnell, and Vitulano 1983; Messerer and Meyers 1983). Only recently have inquiries been made regarding those LD students leaving public school programs.

In a comprehensive review of long-term follow-up studies of LD persons, conducted since 1960, Horn et al. (1983) found 10 studies that included measures of educational/vocational attainment levels. Eight of these studies reported average or better attainment levels for the majority of their LD subjects as compared to expected attainment levels in the general population. However, when measures of functioning in basic skill areas (e.g., reading, written language, mathematics) were used as the dependent variables, a much poorer outcome was found. Of the 17 studies located by Horn et al. (1983), 15 (88 percent) reported continuing deficits at follow-up. In addition, five follow-up studies reported on the emotional/behavioral functioning at follow-up. Three of these studies found poor functioning levels in this area, with two studies reporting good emotional/behavioral outcomes. Problems in the emotional/behavioral area ranged from poor relationship with peers to acting out and problems with law enforcement agencies.

A number of recent studies have focused specifically on the vocational adjustment of LD individuals. Fafard and Haubrich (1981) followed 21 adults who had received educational services from a university laboratory school. Of the 15 adults who had completed or left high school, 4 were employed full time, 1 was unemployed, and 10 held part-time jobs. Most of the jobs held were in the food service area. The authors found that the subjects they interviewed talked of getting a "good job" in the future. They also found that vocational counseling was practically nonexistent for these individuals in their high school programs.

White et al. (1980) examined the current status of 47 young adults previously classified as LD and compared them to 59 young adults not so identified. The individuals were out of school for a period of from one to seven years. They found that the LD students were holding jobs at approximately the same rate as their peers, but that these jobs had less social status and the LD individuals were less satisfied with their employment situations than the comparison group. In a study of LD adults from 19 through 25 years of age, Vetter (1983) also found that 55 percent of the LD individuals held jobs that had significantly lower social status than jobs of their age peers.

Two recent studies using a statewide sample have focused on the entire mildly handicapped population. Hasazi, Gordon, and Roe (1985) conducted a comprehensive study of a sample of handicapped youth exiting high school in nine randomly selected Vermont school districts from 1979 to 1983. Since Vermont groups students by functioning level rather than disability label, students were grouped by resource room (N=296), special class (N=129), and other (N=26) program categories. Resource room programs are designed to serve the LD, mildly retarded, and behaviorally disordered, and the special classes primarily serve the moderately and severely mentally retarded. Hasazi, Gordon, and Roe found that 55 percent of their total sample had jobs at the time of the interview, and only 67 percent of these were full time. Of the resource room sample (the group most likely to be mainstreamed into regular vocational education classes) 61.5 percent had jobs; data were not reported separately for the percentage of these jobs that were full time. The history of a summer job or part-time employment during high school significantly improved the

employment and wages of resource room students after high school, while nonpaid work experience during school had no significant effect. The authors also found that contact with other agencies (vocational rehabilitation, mental health, Vermont Job Services) during or after high school was virtually nonexistent.

Mithaug, Horiuchi, and Fanning (1985) conducted a follow-up study of graduates throughout Colorado. The final sample of 234 individuals included all 1978 and 1979 graduates who could be located. The sample represented 26 of the 45 administrative units in the state. The researchers found that 82 percent of the respondents had held a job at one time since graduation, but at the time of the interview only 69 percent were working. Only one-third of those working specified that their jobs were full-time, whereas 29 percent indicated that their jobs were half- or part-time. Forty-three percent indicated that they typically earned less than $3 per hour, with 13 percent specifying less than $4 per hour.

Kim and Wright (1984) conducted follow-ups of graduates of vocational education programs after one and three years. Of the 3,529 students surveyed, 1,900 responded; 973 of the respondents were regular students, 138 of the respondents were handicapped, 639 were disadvantaged, and 150 were classified as limited English proficiency enrollees. They reported that 39 percent of the special needs learners and 44 percent of the regular students were working in fields related to their training after 1 year; however, after three years only one-third of both groups were still working in a related field. They also found that the salary of special needs graduates was not significantly lower than that of regular students after either 1 or 3 years. For students not working in the field in which they were trained, however, the salary increases for special needs learners were significantly smaller.

Kim and Wright (1984) also found that special needs learners had less favorable employment experiences than regular learners after both one and three years. The median number of months employed was 23 for special needs learners and 29 for regular learners. The groups were similar in changes in employment field. Very little specific information could be found on the adjustment to adulthood of disadvantaged youth. The Vice-President's Task Force on Youth Employment (1980) reported estimates of less than one in three poor minority youth in central cities completing high school. Furthermore, this study suggested that nearly 10 percent of all U.S. 17-year-olds and over 40 percent of all black 17-year-olds are functionally illiterate. Consequently, more and more young people who cannot read or write are entering a labor market that is desperate for workers who can master the sophisticated operations and equipment found in modern offices ("Employers Take over Where Schools Failed to Teach the Basics" 1981). A lack of job readiness and job search skills also hinder many disadvantaged youth from obtaining and maintaining a job (de Lone 1981).

Summary

In reviewing follow-up studies of mentally retarded adults, Butler and Browning (1970) identified a number of weaknesses that limited the generalizability and comparability of these studies. The same types of methodological shortcomings are present in all follow-up studies and limit the conclusions that can be drawn from this body of research. Such problems include the following: (1) few studies include a control group of nonhandicapped learners with whom adjustment can be compared; (2) the parameters defining "successful" vocational adjustment of individuals vary with each study; (3) criteria for deriving the specific sample of individuals are often unspecified and vary greatly among studies; and (4) the length of time between graduation from high school or provision of specialized services and follow-up varies among studies and is often a year or less.

These factors are compounded by the following problems. First, economic trends exert a strong influence over employment patterns for all individuals and must be considered in reviewing any statistics on employment. Second, many studies were able to locate only a small percentage of the original sample. Horn, O'Donnell, and Vitulano (1983) found that 6 of the 24 LD follow-up studies they reviewed had accessed less than 50 percent of their initial samples at follow-up and that most researchers neglected to compare the samples of subjects who participated in follow-up assessments with those who were unavailable for follow-up. One study that did make this comparison (Balow and Bloomquist 1965) found that the LD subjects who refused to attend the clinic for follow-up testing were less likely to have graduated from high school than subjects who were willing to participate. Thus, the results of many of the studies must be viewed in relation to the potential for a biased sample.

Even with the methodological concerns raised, the follow-up studies that have focused on the handicapped have yielded some consistent results. The individuals studied do appear to have found employment at approximately the same rate as their age peers. This employment, however, is often part time and tends to be minimum wage or entry level at most. Moreover, the majority of these individuals, often graduates of special education programs, received little vocational counseling while in high school. They usually found jobs through family-friend networks, rather than through agencies such as vocational rehabilitation. These data strongly indicate that, in order to maximize the employment potential of handicapped youth, vocational education must reexamine its role in preparing the special needs learner for the transition from school to the world of work. This reexamination must be done in light of the types of skills needed to enter and remain in the world of work and the services that vocational education has to offer that will complement those offered by special education, vocational rehabilitation, and other adult service agencies.

Types of Skills Needed

Research has shown that special needs youth are unemployed or underemployed for three basic reasons: (1) lack of interpersonal skills, such as work habits and attitudes or social communication skills (Brown 1976; Foss and Peterson 1981; Gustafson 1978; Melstrom 1982; Richards 1980; Sali and Amir 1971; Schalock, Harper, and Carver 1981; White et al. 1982); (2) lack of job-related academic skills (Diehl and Mikulecky 1980; Selz, Jones, and Ashley 1980); and (3) lack of specific vocational skills to perform more than entry-level personal service jobs (Hartley 1980; McAfee and Mann 1982; Ruffner 1981). Clearly, although professionals have identified a variety of programming options to prepare special needs individuals for the transition from school to work (Hartley 1980; Johnson 1980; Sitlington 1981), these options have failed to provide students with these essential skills. If special needs youth are to be prepared for the world of work, the specific skills needed in each of these areas must be identified and a delivery system must be developed to ensure that relevant instruction and services are provided.

Interpersonal Skills

One of the major causes of the unemployment and underemployment of the special needs learner has been shown to be poor interpersonal skills. Studies investigating the vocational adjustment of handicapped adolescents and adults have consistently demonstrated a strong relationship between success on the job and interpersonal factors such as behavior, appearance, and relationship with peers and supervisors (Mathews, Whang, and Fawcett 1980; Sali and Amir 1971).

A growing body of experimental research supports the assertion that mildly handicapped adolescents are not typically as advanced as their nonhandicapped peers in many areas of social-emotional development, including the perception and interpretation of emotions and social situations and the ability to develop empathy (Bachara 1976; Pearl and Cosden 1982; Wiig and Harris 1974). Schumaker et al. (1982) found that learning disabled students performed similarly to juvenile delinquents in an assessment of general social skills. They concluded that these adolescents may experience difficulty with pertinent occupationally related social skills such as participating in a job interview, accepting criticism from an employer, providing constructive criticism to a co-worker, and explaining a problem to a supervisor.

Crosby (1984) examined the work attitudes of a sample of trade and industrial students from one postsecondary school and three secondary schools in Kentucky. The 1,300 students included 796 disadvantaged, 226 handicapped, and 350 regular students in 35 programs. Crosby used Kazanas and Brach's Affective Work Competencies Inventory, which measures 15 affective competencies. He found that disabled students consistently varied from the mean in a negative direction and were more negative on all affective clusters than the disadvantaged or unclassified stu-

dents. In addition, he found that unclassified students scored more positively than both special needs groups on 9 of the 15 affective competencies.

Passmore and Wircenski (1981) identified some of the skills necessary for disadvantaged youth to make a successful transition to adult life. These skills were validated by a sample of 21 experts in the field and 12 employers. Their suggested competencies included (1) educational skills, including communication, information processing, and computation; (2) personal skills, including personal and behavioral characteristics; (3) occupational exploration, including knowledge factors and career choice; (4) job search skills; (5) work-related skills; and (6) living skills, including managing personal finances and personal health and safety. It should be noted that the majority of these competencies related to the interpersonal skills area.

Wircenski et al. (1982) surveyed 903 vocational education teachers, with a 50 percent usable response rate. They also surveyed 8,079 disadvantaged graduates of their programs, with a 59 percent return rate. They found that vocational teachers were spending the greatest amount of their time on the behavioral characteristic component of interpersonal skills; job search skills were second. The skills needed for growth and promotion on the job were neglected, along with life skills.

A number of studies involving employers have also reinforced the need for training in interpersonal skills. Richards (1980) surveyed 178 members of local service clubs in Delaware, New Jersey, and eastern Pennsylvania. He found that employers viewed the possession of interpersonal skills as more important than previous work experience. Fisher et al. (1968), after studying 100 entry-level jobs in 35 businesses across the country, concluded that skills are less important than education, personal characteristics, and attitudes and that the interviewer's reaction to an applicant can be an extremely important employment factor. Gustafson (1978) interviewed 23 employers across the state of New Hampshire regarding important qualities desired of their employees. These employers rated past success in acquiring and maintaining a job as two of the major qualities needed. The behaviors of trustworthiness and working flexibility were rated highest, with personal appearance, hygiene, respectfulness, and cooperativeness close behind.

In an extensive study, Brown (1976) surveyed 5,213 employers throughout Texas. The 1,695 respondents cited 10 leading reasons (in rank order) for rejecting job applicants after the job interview:

- Poor reasons for wanting a job
- Past history of job hopping
- Inability to communicate during interview
- Health record
- Immaturity
- Personal appearance
- Manners and mannerisms
- Personality

- Lack of specific job skills
- Poorly filled-out application

It should be noted that 9 of the 10 reasons are related to interpersonal skills, not lack of specific vocational preparation. The employers also cited five primary causes of employee termination (in rank order): (1) absenteeism, (2) lack of interest, (3) continually making costly mistakes, (4) not following directions, and (5) unwillingness to learn.

Thus, it appears that employers view interpersonal skills as very critical to any individual's obtaining and maintaining a job. Research also exists to support the assertion that many mildly handicapped adolescents lack many of these skills. This is also true for many youth classified as disadvantaged.

Job-Related Academic Skills

As the transition of youth from school to work is further examined, a second area of needed skills also emerges—that of job-related academic skills. Certain academic skills appear to be especially relevant for participation and success in vocational training programs and subsequent employment environments. A great deal of research (Greenan 1983, 1984; Pratzner 1978; Selz, Jones, and Ashley 1980) has investigated the concept of generalizable or transferable skills. These are generic interpersonal and functional academic skills found in a number of vocational education programs and occupations.

Greenan (1983) systematically validated a core of 28 mathematics skills, 27 communication skills, 20 interpersonal relations skills, and 28 reasoning skills that were required across and within a majority of secondary vocational programs and occupations in the major vocational areas. The mathematics skills identified included whole numbers, fractions, decimals, percent, mixed operations, measurement and calculation, and estimation. Communications skills identified as having high generalizability across programs were words and meanings, reading, writing, speaking, and listening. The third major generalizable skills area includes such interpersonal relations skills as work behaviors, instructions, and supervisory conversations. (This area corresponds to the interpersonal skills discussed in the previous section.) The final area includes the following reasoning skills: verbal reasoning, problem solving, and planning.

Selz, Jones, and Ashley (1980) surveyed employers concerning competencies needed for succeeding in the world of work. Competencies related to the reading, writing, and math skills needed in a specific job were rated as most important. The study concluded that, once basic skills have been learned, students need to practice these skills in relation to the variety of conditions and situations that occur in the workplace.

One of the most comprehensive studies of the basic skills requirements of jobs in industry was conducted by the Canada Employment and Immigration Commission (Smith 1973). Workers from 10 different occupational families were interviewed to determine their job-related performance in the areas of math, reading and writing, reasoning, and science. Results indicated that the majority of the workers in all 10 occupational families completed reading tasks that involved a variety of print materials. Writing tasks included completing forms, letters, memos, and reports. Another study (Diehl and Mikulecky 1980) that reviewed the literacy demands of a cross-section of occupations found that only 2 percent of the occupations required no reading and writing. Employees

spent almost 2 hours each day on reading and writing tasks that involved the use of print, charts, graphs, and computer terminals. The degree of reading difficulty of job-related materials did not appear to differ greatly across occupational levels. The materials examined in these studies usually ranged in difficulty from the 10th-grade to the 12th-grade level; however, higher level occupations tended to involve more read-to-assess tasks (Diehl and Mikulecky 1980; Moe, Rusch, and Storlie 1979; Sticht 1982).

Job-related reading, however, has been found to differ from school reading. Job-related reading is done for the purpose of reading-to-do, whereas school programs involve reading-to-learn tasks (Diehl and Mikulecky 1980; Seifert 1979). Students read mostly textbooks whereas workers read a variety of materials in different situations throughout the day (Mikulecky 1982). Job-related literacy tasks are also completed in a context that provides additional information to the language user. Research has shown that particular kinds of reading skills are learned more rapidly when the training is specifically focused on that type of reading, rather than on general reading tasks. In programs focused on specific job-related reading tasks (Mikulecky and Strange 1982; Sticht 1979, 1982), job-related reading gains were much larger and retention rates much higher than from general reading instruction.

These data seem to indicate that the emphasis on basic academic skill instruction is important, but that such instruction should be conducted in the context of the types of reading required in the world of work. Such a shift in emphasis would not only yield greater generalizability, but may be more motivating to special needs adolescents who have often been confronted with basic remedial reading instruction since early elementary grades.

Specific Vocational Skills

Although the studies reviewed in the previous sections highlight the importance of interpersonal and job-related academic skills for workers, the literature is mixed concerning the need for vocational skill training. Selz, Jones, and Ashley (1980) found that, next to basic reading, writing, and math skills, the ability to use tools and equipment on the job was the second most important competency identified by the employers they surveyed. Ruffner's (1981) study of members of the American Management Association identified lack of marketable skills and poor job preparation as factors hampering the employment of handicapped persons. This study found that, although many were trained for blue-collar and social service positions, the employment demands were for applicants with training in the technical fields. However, special needs individuals rarely receive vocational training, especially in technical fields, and have very few job-entry skills (Brolin and Elliott 1984; Hartley 1980). The emergence of more high technology industries will create an even greater demand for persons with specific vocational skill training.

It has been estimated, however, that approximately one-third of the jobs in the U.S. economy can be performed satisfactorily by anyone who can read, write, and do simple arithmetic; pick up and set down relatively light objects; and drive an automobile. Roughly another one-third require the preceding preentry qualifications plus a significant amount of on-the-job training. Only one-third require specific preentry occupational training (Mangum 1981). Although new technology and our changing economy will alter these figures to some extent, the bulk of job-specific training done in this country (up to 80 percent) is accomplished in the workplace (Durham 1981).

Research has established little relationship between vocational training and labor market success (Freeman and Wise 1979), except in the area of preclerical training. Many authors feel that if skill training is conducted at the expense of teaching basic academic skills and employability skills, vocational training programs will spend considerable time, effort, and resources for a

limited return. However, Durham (1981) concluded that there is a strong relationship between hours worked in high school and later employment and wages. Hasazi, Gordon, and Roe (1985) also found this positive relationship, but only with paid employment.

The National Child Labor Committee (1978) has analyzed the issue of work experience. It cited an Office of Youth Programs statement that work experience is the chief element for affecting youth's ability to get and keep a job, for developing a career, and for providing valuable and tangible community benefits. The committee also questioned whether the existing programs actually meet the following goals of work experience: (1) to provide a chance to experiment, (2) to provide real training in specific skills, and (3) to provide general training in work habits and attitudes.

Gibson (1983) also investigated the effect of work experience on the knowledge of basic employability skills and work attitudes of disadvantaged youth who participated in the Coordinated Vocational Academic Education (CVAE) Program in selected Georgia high schools. The study compared the scores of new CVAE students versus students who had been in CVAE for 1 year, as well as those who had work experience and those who had not, on the Program for Assessing Youth Employment Skills (PAYES). CVAE students who had participated in work experience scored significantly higher on all subtests of the PAYES than those students who had no work experience.

Summary

Previous research appears to indicate that instruction in three skill areas is needed if the special needs learner is to make a successful transition from school to the world of work. To date, the strongest evidence exists supporting the need for interpersonal skills in order to obtain and maintain employment. There is, however, emerging evidence that job-related academic skills contribute significantly to the ability of the individual to compete for employment. In addition, there is increasing documentation that work experience, in itself, is important to future employment, although the results are mixed on the issue of whether this work experience needs to be paid experience. Clearly, instruction in these areas must be provided if we are to maximize the potential of special needs individuals to obtain and maintain employment successfully.

Overview of Disciplines Involved in Transition

The previous sections of this monograph focused on studies related to what happens to special needs youth once they leave school and what skills have been identified as critical for the transition of youth from school to work. Before we can determine what the role of vocational education should be in preparing special needs youth for this transition, we need to look at the variety of disciplines involved in the transition process and what skills and assets each of these fields has to offer the special needs youth. The major disciplines and agencies involved in this process are vocational education, special education, vocational rehabilitation, Job Training Partnership Act agencies, and developmental disabilities agencies. The services and expertise offered by each of these fields will be highlighted, along with the legislation mandating the discipline's involvement in the transition process.

Vocational Education

The field of vocational education provides employment-related instruction to all types of learners and concentrates on training in one of the following major areas: business and office education, distributive education, health occupations, home economics occupations, trade and industry, and agriculture. Vocational educators have expertise in the following areas: knowledge in specific vocational/occupational areas, knowledge about job availability and job requirements, contacts with employers, and experience in placing and supervising persons on the job.

The focus of vocational education is preparation for paid or unpaid employment. Vocational programs achieve this through a combination of classroom instruction and hands-on experience in a laboratory setting or on a job site in the community. Vocational student organizations are also a major component of vocational education and are used to develop student leadership skills and reinforce basic instructional concepts. Vocational education also uses advisory committees to involve employers in program design, implementation, and evaluation. Vocational education can be provided at the secondary or postsecondary level; postsecondary programs typically focus on more advanced skill training.

The involvement of special needs youth in vocational education has been mandated since the passage of the Vocational Education Act of 1963 (P.L. 88-210). This commitment was increased with the passage of the Vocational Education Amendments of 1968 (P.L. 90-576) and the Vocational Education Amendments of 1976, Title II (P.L. 94-482). Both sets of these amendments provided for a percentage of funds from basic state grants to be set aside to provide vocational education opportunities to handicapped and disadvantaged youth. The Carl D. Perkins Vocational Education Act of 1984 is the most recent legislation governing vocational education in the United States. This legislation added the following provisions related to the education of special needs youth:

1. Special needs populations (in addition to the handicapped and disadvantaged) were newly defined to include—

   —adults in need of training and retraining,

   —single parents or homemakers,

   —individuals who participate in vocational education programs to eliminate sex bias, and

   —criminal offenders in correctional institutions.

2. The right of the handicapped and disadvantaged to the full range of vocational programs available to all individuals was reaffirmed.

3. Vocational education was directed to offer programs in the least restrictive environment in accordance with the Education of the Handicapped Act. Emphasis was placed on serving special needs youth in ongoing vocational education programs rather than in separate programs.

4. Vocational education was recommended for inclusion as a component of the Individualized Education Plan (IEP) whenever appropriate.

5. The 10 percent set-aside of funds for the handicapped was retained and the set-aside for disadvantaged was raised to 22 percent.

6. Coordinated planning for the handicapped between vocational education and special education was recommended.

7. Federal funds were concentrated in areas with high youth unemployment and large numbers of dropouts.

8. It was directed that handicapped and disadvantaged students who enroll in vocational education must receive—

   —assessment of their interests and abilities and of the special needs that must be met for them to complete the program successfully;

   —special services, including adaptation of curriculum, instruction, equipment, and facilities to meet these identified needs;

   —guidance, counseling, and career development support;

   —counseling services designed to facilitate the transition from school to post-school employment and career opportunities.

Special Education

The second discipline to be involved in transitional programming for the special needs learner is special education, which works with the handicapped component of the special needs category. The major expertise of special education professionals lies in their ability to identify student

needs, teach basic academic skills, individualize instruction to meet the identified student needs, and evaluate the effectiveness of instruction. Special education personnel, however, are limited in that their services are usually offered away from the mainstream of the education system, and they usually lack experience in the world of work.

The major legislation governing special education is the Education for All Handicapped Children Act of 1975 (P.L. 94-142). This act, described as the civil rights bill for handicapped children and youth, provides for education of handicapped individuals aged 3-21. The bill also requires that a free and appropriate education be provided for all youth in the least restrictive environment. In addition, it mandates the development of an Individualized Education Plan (IEP) for all handicapped learners receiving special education services, along with due process rights and nondiscriminatory testing. Vocational education may be defined as a special education service, if the need for this service has been documented.

The most recent special education legislation, however, holds even more impact for the involvement of this discipline in the transition process. The Education of the Handicapped Act Amendments of 1984 (P.L. 98-199) establish the transition of handicapped youth from school to the adult world as a priority of the Office of Special Education and Rehabilitative Services. The amendments also require that information be kept on the number of handicapped students exiting school and that the services anticipated for each of these students for the following year be identified.

Vocational Rehabilitation

The discipline of vocational rehabilitation primarily serves individuals who have been classified as handicapped or whose disabilities interfere with obtaining and retaining employment. Vocational rehabilitation primarily serves a post-school population, but, according to the Vocational Rehabilitation Act Amendments of 1984, this discipline must also work with in-school youth who are preparing to make the transition to employment.

Vocational rehabilitation often serves disabled adults by identifying which services are needed and purchasing them on a contractual basis from existing agencies. Services that can be funded by vocational rehabilitation include (1) medical and vocational evaluation; (2) medical treatment or prosthetic devices to make the person more employable; (3) academic support services related to instruction in a vocational training program; (4) specific vocational skill training; and (5) other services related to support in vocational training programs, including transportation during the training period, tools, and textbooks. One of the major strengths of vocational rehabilitation is the ties it has established with adult service providers and its knowledge of the local community and local employers. Vocational rehabilitation, however, is limited in its ability to serve as a transition agent for all special needs youth. First, it primarily serves special needs youth who have been labeled handicapped. Second, it has a time limitation placed on the provision of certain services and is not able to provide the ongoing support needed by some special needs youth. Finally, vocational rehabilitation agencies usually rely on using existing services in the community, rather than provide their own vocational training.

Job Training Partnership Act Agencies

Employment programs for the economically disadvantaged were previously governed by the Comprehensive Employment and Training Act Amendments of 1978 (P.L. 95-524). The current legislation governing these programs, however, is the Job Training Partnership Act (JTPA) of 1982 (P.L. 97-300). This act—

—increased involvement of the private sector via Private Industry Councils (PICs)—at least 50 percent of PIC members must be from private industry;

—stated that performance standards must be established and met; and

—emphasized as its main goal preparation for paid employment in the private sector.

JTPA programs primarily serve economically disadvantaged adolescents and adults. Many states have added a provision to consider the handicapped person as a "family of one," making this population eligible for JTPA services regardless of income. JTPA activities focus on preparing the individual as quickly as possible to enter the work force. Like vocational rehabilitation, JTPA often identifies the needs of individual participants, then purchases services from existing training programs. JTPA emphasizes on-the-job training and provides employers with incentives to hire and train the disadvantaged.

Services that can be funded by JTPA agencies include job search assistance and counseling, specific skill training in an existing vocational program, on-the-job training, programs to develop positive work habits and attitudes, vocational exploration and work experience, and supportive services that enable individuals to participate in a training program. JTPA programs have much to offer all special needs learners, especially in relation to their strong ties with private industry. They do, however, have two major limitations: (1) their emphasis is on short-term training, which is often not extensive enough for the special needs learner; and (2) counselors have been trained to deal with the disadvantaged but not necessarily with the handicapped individual.

Developmental Disabilities Programs

Developmental disabilities (DD) agencies are involved in the transition of special needs learners in terms of both vocational and daily living areas. Although the definition of developmental disabilities differs from state to state, these agencies primarily serve handicapped youth and adults with such disabilities as mental retardation, cerebral palsy, autism, epilepsy, or behavioral disorders. These agencies are primarily in charge of providing group living arrangements for the DD population as they become adults. They have also recently become involved in the employment component of the transition process through their most current legislation.

These agencies are governed by the Developmental Disabilities Act of 1984 (P.L. 98-527). This act establishes employment-related activities as one of the priority services and introduces the concept of "supported work." This concept involves the provision of ongoing support services, such as supervision and training, to individuals who need this support to maintain employment.

Role of Vocational Education

The previous sections of this monograph dealt with the skills needed by the special needs learner to make the transition from school to the world of work and the disciplines available to help in this transition. The remaining sections propose the roles that vocational education should pursue in the transition process, models for achieving these roles, and sources of information on existing programs that have involved the interaction of vocational education with other disciplines. The final section of this document presents recommendations on how vocational education can fulfill the roles that have been proposed.

Proposed Roles for Vocational Education

The information from adult adjustment studies has indicated that special needs youth are not being adequately prepared for entry into the world of work. Special needs learners not only demonstrate a lower percentage of employment, but those who are employed are often working in part-time jobs that are associated with lower economic status. In addition, a number of studies have indicated that work experience is associated more positively with post-school employment than is the provision of specific skill training. Data from studies involving employers indicate that what are often called employability or interpersonal skills are possibly the most important skills they seek in an employee, followed by basic academic skills and then specific skill training.

Information from these studies, combined with the services available from the disciplines of special education, vocational rehabilitation, Job Training Partnership Act agencies, developmental disabilities agencies, and other adult service providers, should be carefully considered in determining the roles that vocational education should play in the transition process.

Okolo and Sitlington (1986) examined the role of special education in the transition process, using the overall concept of the phases in the career education process (Kokaska and Brolin 1985). These phases include awareness, exploration, preparation (which often includes work experience), and follow-up. They have recommended six types of vocationally relevant activities: (1) occupational awareness, exploration, and basic work experience; (2) indepth career/vocational assessment; (3) instruction in job-related academic skills; (4) instruction in job-related interpersonal skills; (5) support services to other disciplines involved in vocational programming; and (6) post-school placement and follow-up.

The same approach can be taken in delineating the roles that vocational education can most effectively play in the transition process. Such roles must build upon the strengths of the discipline—the skills that vocational educators have to offer: knowledge of job requirements, strong relationships with employers, access to work experience and on-the-job training settings, a

realistic setting that provides hands-on experience through laboratory components or experience in the community, experience in preparing youth and adults for employment, and experience in placing and supervising youth on community-based sites.

In most cases, vocational educators would work cooperatively with personnel responsible for coordinating programming for special needs youth. At the secondary level, this would be the special education teacher for handicapped students, and the vocational special needs coordinator for disadvantaged learners and other students with special needs. At the postsecondary level, this would most likely be vocational special needs personnel.

Vocational educators are equipped to play a number of roles in the transition process. Most important among these are the following:

- Assisting special education or vocational special needs personnel in the initial and ongoing assessment of the learner in terms of interests, interpersonal skills, job-related academics, and vocational skills. Vocational educators can provide information to the assessment team in terms of the interpersonal, job-related academic, and specific vocational skills needed for specific job areas or occupational clusters. They can also provide a realistic setting for the collection of such information in the vocational education classroom, laboratory, or in actual job settings. Vocational educators can also provide input and validation of the content and requirements of performance or work samples developed by special needs personnel to measure student performance and interest on generic or specific job tasks.

- Providing a setting for additional exploration through basic vocational education classes such as industrial arts and home economics, as well as exploratory experiences in a sampling of vocational education classes at the high school or postsecondary level.

- Working with special education or special needs personnel in instruction in job-related academic skills. Vocational educators are best qualified for identifying the basic academic skills required in specific vocational areas. They also have an ideal setting for demonstrating to the student that academic skills are required for the world of work and for helping to provide the student with the academic skills needed for a specific job or cluster of jobs.

- Instruction in job-related interpersonal skills in real-life situations in the laboratory or on-the-job experience components of the vocational education program. Again, although vocational educators may not feel prepared to instruct in these skills, they have the optimum learning environment for demonstrating to the student that these skills are necessary for obtaining and maintaining employment. It is also possible that the special needs learner's behavior may be more socially appropriate in an environment that is not as threatening as the academic environment of most classrooms.

- Training in clusters of vocationally related skills. The concept of cluster skill training was first suggested by Bellamy, Horner, and Inman (1979) in relation to training for the severely handicapped. This concept entails teaching clusters of generalizable vocational skills (i.e., use of specific tools) and then combining these clusters in training for specific jobs. The concept of cluster skill training is particularly relevant for the secondary vocational program, where many of the graduates may not pursue employment in the specific occupational area, but could learn basic groups of skills that could be generalized to other occupations.

- Provision of work experience and on-the-job training and placement. As previously mentioned, experience in the world of work has been demonstrated to be a correlate of post-school employment for the special needs learner. The close relationship that most vocational educators have with community employers makes them the ideal clearinghouse for community-based placements for the special needs learner. In some cases, special education or vocational special needs personnel may be available to do the actual job supervision; the vocational educator, however, can be a valuable resource for job placement sources, particularly in terms of paid employment. These jobs may be used to provide work experience or actual on-the-job training in line with the traditional cooperative education model.

- Training in specific vocational skills. This role is typically identified with vocational education. It may be time, however, to examine this role in terms of its importance in secondary level training programs. Although some students may be ready for this specialized training as high school juniors or seniors, this role may be most applicable at the postsecondary level, once students have chosen the occupation in which they would like to specialize.

Integration of Special Needs Learners in Vocational Education

Vocational education is designed to provide training for employment in occupations requiring less than a baccalaureate or advanced degree. In addition to specific vocational skills training, other benefits may be attained through participation in vocational education. Leadership training and social interaction are emphasized through students' participation in vocational clubs. Vocational educators often work closely with local employers and labor representatives who serve on advisory boards or participate in other business-education partnerships. Thus, vocational educators can assist students in making important contacts with potential employers, thereby facilitating the acquisition of a job upon graduation or actually making the job placement. Since many special needs learners perceive vocational education as a desirable alternative to academically oriented courses, it may deter them from dropping out of school (Mertens, Seitz, and Cox 1982; Perlmutter 1982). Other data suggest that vocational education participants are more likely than nonparticipants to be employed and earn high wages upon graduation (Campbell et al. 1981; Grant and Eiden 1982; Li 1981). Vocational education thus can be an important and potent contributor to the transition process.

Although current legislation (P.L. 94-142; Carl D. Perkins Vocational Education Act 1984) identifies as a priority the inclusion of special needs learners in vocational education, these students remain underrepresented (Cobb and Phelps 1983; Corman 1980; Nacson and Kelly 1980). Only about 2 percent of the students enrolled in vocational education programs are considered mildly handicapped, despite the fact that 10 percent of the school-aged population has been classified as such (Benson and Hoachlander 1981; President's Commission on Employment of the Handicapped 1983). Moreover, special needs learners appear to be participating in vocational education programs that underestimate their potential. Data from a survey of over 10,500 schools (U.S. Office of Civil Rights 1980) show that handicapped students are overrepresented in nonskilled work experience programs (such as custodial services) and are underrepresented in higher level programs (such as dental hygiene).

Maurice, Townes, and Hill (1984) examined the career aspirations of 2,348 disadvantaged students in 29 secondary and postsecondary schools. They also contacted 201 parents. They found

that the negative effects of disadvantagement are rooted in the experiences of students before they pursue vocational education. The most significant barriers are posed by economic, social, and psychological influences that shape their occupational desires. They also found that the negative effects of being disadvantaged are reinforced by the educational system. Disadvantaged youth are screened into low level vocational programs and once in, they do not have the desired mobility to move to higher level training programs.

Various factors can be cited that appear to contribute to the underutilization of vocational education as a partner in the transition process. First, data suggest that cooperation and communication between special educators and vocational educators is infrequent. Halpern and Benz (1984), in a study of secondary special education practices in Oregon, found that almost 25 percent of the teachers they surveyed had no involvement with vocational education. Moreover, a large discrepancy existed regarding the coordination of vocational and special education services. Over half (60 percent) of the administrators they surveyed stated that special educators assumed the responsibility of coordination, whereas only 30 percent of the special educators believed that coordination of services should fall under their purview.

Another barrier to the inclusion of special needs youth in vocational education is the increasingly stronger academic and interpersonal skills requirements of these programs and the occupations they represent. Criteria for admission to vocational programs often include adequate performance in prerequisite academic courses and/or basic skill examinations. Once enrolled, special needs students may find that the classroom components and the textbooks used in vocational programs place heavy demands on academic skills (Sherrell 1981; Sitlington 1981) and limit the probability of success.

Vocational educators' reluctance to include special needs learners presents an additional barrier. A number of studies (Camaren, Beck, and Fox 1975; Dahl and Lipe 1978; Hughes 1978; Meers 1977; Minner 1980; Rumble 1978; Whiteford and Anderson 1977) have identified vocational educators' concerns regarding handicapped students' participation in their programs. These include lack of preparation to teach handicapped learners, increased time demands, negative effects on the other students in the class, equipment and facilities modification, liability and accountability, and standards for awarding grades and vocational certificates. Other research, however, has demonstrated that vocational educators do not hold negative attitudes toward handicapped persons in general (Moorman 1980; Sitlington, Okolo, and Moore 1984). Furthermore, inservice education and consultation can foster cooperative relationships between special educators and vocational educators. Other activities designed to maximize vocational educators' involvement in the mainstreaming process and to disseminate information about special needs learners and relevant legislation appear especially fruitful (McDaniel 1982; Minner 1980).

Despite its assets, vocational education does not constitute a sufficiently comprehensive program to ensure the successful transition of all special needs adolescents. Indeed, Hasazi, Gordon, and Roe (1985) found that participation in vocational education in and of itself was not associated with better employment outcomes for resource room students. Although vocational education can provide specific vocational skill training, it does not systematically address the work habits and attitudes that are equally critical to employment success (Sitlington 1981). Moreover, most vocational education programs do not begin until 11th grade, and thus may provide "too little, too late" for some learners. A coordinated effort between special education or special needs personnel and vocational educators offers the most promise for delivering the complete range of services necessary to the future success of the special needs adolescent, with special education or vocational special needs programs assuming primary responsibility for instruction in job-related academic and interpersonal skills prior to and throughout the high school years.

Proposed Program Models

A number of authors have described program models that address the special needs adolescent's need for training in the interpersonal, basic academic, and specific vocational skills discussed in the previous sections (Halpern 1985; Johnson 1980; Meers 1980; Sitlington 1981). These authors and others emphasize the roles of special education, vocational education, vocational rehabilitation, and Job Training Partnership Act programs in laying the foundation for the transition from school to the world of work. Meers (1980) described four possible forms vocational special needs programs have typically taken in the past:

1. A separate vocational special needs course such as vocational English or vocational math
2. Regular vocational education classes with support or modified materials
3. Regular vocational education classes with resource teachers in class to assist the special needs student
4. Regular vocational education classes with support from the special resource center or the special education classroom

Johnson (1980) presented a comprehensive approach to vocational training, which moves from the least to the most restrictive environment. The first three levels of Johnson's continuum include the following:

1. Regular programs in which the special needs student is fully integrated into the regular vocational education program, with special and related services provided outside the program
2. Mixed/integrated programs, in which students participate in a regular vocational education program with support services such as readers and individualized instructional materials provided in the program. Special education may also be provided for handicapped students outside the program
3. Separate in-school programs, in which students participate in a vocational program designed specifically for special needs learners

Sitlington (1981) stated that perhaps the most useful way of looking at cooperative efforts between vocational education and other disciplines is to consider the overall concept of career education. It is within this model that special education and vocational education can function most efficiently in providing the basis for career preparation for the special needs learner. This model includes career awareness activities to begin at the elementary level, career exploration activities to begin at the junior high level, and career preparation activities usually conducted in senior high school and beyond.

Proposed Delivery Continuum

Wiederholt and McEntire (1980) presented three dominant rationales underlying training programs for the handicapped learner. These rationales can be applied to the provision of vocational education for all special needs learners. The three approaches are (1) change the system, (2) fit the system, and (3) ignore the system. Proponents of the first approach would argue that if

special needs learners are to be taught the needed interpersonal, basic academic, and specific vocational skills in regular vocational education programs, then the existing curriculum and learning environment need to be modified, while the skills of the student are also modified. Advocates of the second approach would argue that regular vocational education programs are appropriate for teaching the needed generalizable skills as is and that the student should be changed the better to fit the demands of the vocational education classroom or other vocational training program. Programs following this rationale would concentrate on tutoring the student in the needed skills, attempting to remediate the learner's deficiencies.

Those who would argue for the third approach—ignore the system—would state that the needed generalizable skills cannot be taught to the learner in the current vocational education system. They would argue that a separate program should be designed solely for the special needs learner, including instruction in interpersonal and basic academic skills, as well as the needed vocational skills.

Deno (1970) proposed a second theoretical schema that can be integrated with Wiederholt and McEntire's approaches to provide a framework for structuring instruction in the needed competencies. This system, called the Cascade of Special Education services, proposes that a continuum of services be made available to the learner and that learners be allowed to move up or down that continuum depending upon their needs. Although this system was proposed specifically for handicapped learners, it has much to offer all special needs individuals. Such a system, adapted to the vocational education program, would include the following stages, moving from least to most restrictive: (1) instruction by the regular vocational education teacher with consultation from the special needs coordinator or special education teacher; (2) instruction by the regular vocational education teacher with assistance from an aide or other instructional personnel within the vocational classroom; (3) instruction in the regular vocational education class, with assistance provided to the learner from the resource room or special needs center; (4) separate class in such areas as vocational math, communications skills; and (5) separate vocational program for the special needs learner incorporating not only specific vocational skills instruction, but activities related to interpersonal skills and basic academics. Each of these options is presented in figure 1 and will be discussed in more detail in the following paragraphs, along with how they fit into the three basic approaches proposed by Wiederholt and McEntire (1980).

The first approach can be classified as a "change the system" approach. It is not much different from what is currently being done in many classrooms, with the exception that the target of the consultation should be assisting the vocational education teacher in incorporating instruction in generalizable interpersonal and academic skills into the ongoing vocational curriculum. The advantages of this approach are that it helps all students in the program and allows the special needs learner to remain in the vocational classroom on a full-time basis. This approach, however, may not be sufficient if the special needs learner has major deficiencies in important academic or interpersonal skills. This approach also requires the full cooperation of the vocational education teacher.

The next three approaches involve fitting the learner to the system and may be the most effective in dealing with special needs learners who have major deficits in certain academic or interpersonal skill areas. All three approaches involve leaving the learner in the regular vocational education program, while providing increasing amounts of structured instruction in the required skill areas. The first of these approaches would require a paraprofessional, the special needs coordinator, or the special education teacher actually to attend class with the learner and assist the vocational education teacher with basic instruction. While in the classroom, the additional professional also works with other students, but focuses primarily on the special needs learner(s).

1. Instruction by Regular Vocational Teacher with Consultation

Change the System

2. Instruction by Regular Vocational Teacher with In-Class Assistance by Support Personnel

3. Instruction by Regular Vocational Teacher with Supplementary Instruction from Resource Room/Center

Help Learner Fit the System

4. Vocational Skill Instruction in Regular Program with Separate Class in Generalizable Skills

5. Separate Vocational Program

Ignore the System

Figure 1. Continuum of support services

Again, the advantage of this approach is that it keeps the special needs learner in the vocational classroom and concentrates on the specific academic or interpersonal skills needed to complete the assigned task that day. If there are serious skill deficits, however, this approach may not be sufficient.

The next two approaches involve providing supplemental instruction to the special needs learner through a resource room or resource center or through a special class in vocational math, vocational communication skills, and so forth. If the learner is currently served through special education, the needed supplemental instruction may be provided by the special education teacher in a resource room or special class program. If this is not the case, then a separate resource center or program can be established. Instruction in both of these programs can follow one of three tracks: tutoring, instruction in academic coping skills, or remediation. The tutoring method is a "quick fix" approach that involves work by the professional, paraprofessional, or another student to help the learner grasp certain mathematics or communications skills needed to succeed in the vocational education program or on a specific job, or to pass certain aspects of the vocational education course. This approach provides more structure than having an aide in the regular class, but still may not be sufficient for serious skill deficiencies or for instruction in the interpersonal relations or reasoning skills. The second method that may be used in the resource center or special class is that of academic coping skills or learning strategies. This approach, which was developed by Alley and Deshler (1979), involves teaching the learner how to learn, rather than teaching specific content. Specifically, learning strategies are defined as "techniques, principles, or rules that will facilitate the acquisition, manipulation, integration, storage, and retrieval of information across situations and settings" (p. 13). These techniques are particularly well suited for instruction in a number of basic academic and interpersonal skill areas. The advantages of such an approach are that it teaches the learner strategies that can be applied across a number of settings. The disadvantages are that it requires more time than tutoring a specific skill and may not provide the learner with the specific skill or knowledge needed immediately.

The third method that can be used in the resource room or separate class is that of remediation. This approach involves an organized ongoing program of instruction in the identified deficiencies in math, reading, or interpersonal relations. The main purpose of this approach is ameliorating the student's problems to the extent possible, with complete correction as the ultimate, though often unattained, goal (Wiederholt and McNutt 1979). The advantage of such an approach is that serious skill deficits can often be improved, although not always eliminated. The disadvantages are the amount of time involved and the fact that the student's instruction is often fragmented into isolated instructional programs that are not always tied in with the vocational skills instruction.

The fifth major approach involves ignoring the system and providing all vocational skill instruction in a totally separate program established for the special needs learner. This program could be taught by vocational education, special education, or Job Training Partnership Act (JTPA) personnel. The disadvantage of such an approach is that it removes the special needs learner totally from the regular vocational education classroom. The advantage, however, is that it allows instructional personnel to tailor academic and interpersonal skills instruction and vocational skills instruction specifically to the needs of the learner. Caution must be taken, however, that instruction in specific vocational skills is not sacrificed and that the math, communications, interpersonal relations, and reasoning skills are not taught in isolation.

The support services presented in the preceding paragraphs form a continuum along which special needs learners can move depending upon four variables: (1) the level of the deficits which they exhibit in the basic academic and interpersonal skills areas; (2) the importance of these skills

in attaining their vocational goal; (3) the characteristics of the existing vocational training programs; and (4) the existing support services available to the learners (Sitlington, forthcoming). As in any programming decision for special needs learners, it is critical that the best possible match be made between the learner and the support services provided. Such a match should be made on the basis of initial and ongoing assessment of the identified critical skill areas (Cobb and Larkin 1985; Greenan and Sitlington, forthcoming). In addition, the appropriateness of the support services should be evaluated through an ongoing system of program evaluation.

Existing Models of Interagency Cooperation

There are a number of examples of cooperation involving vocational education, special education, vocational rehabilitation, Job Training Partnership Act agencies, and other adult service providers. Some of these cooperative efforts have been described in several publications. Rather than duplicate such program descriptions in this monograph, these resources are described below and the reader is referred to them for further information.

The first of these sources, *Vocational Education Models for Linking Agencies Serving the Handicapped. Handbook on Developing Effective Linking Strategies* (Tindall et al. 1982), outlines the major components of interagency cooperation and the roles that each agency may assume in the transition process. It also lists interagency linkage models from Maryland, New Jersey, and Virginia. The second source, *Models of Exemplary Practices in Coordinating Special Education and Vocational Rehabilitation Services: Project Summary* (1984), reviews trends in coordinated vocational programs for disabled youth and describes features of nine exemplary programs that coordinate the special education and vocational rehabilitation services.

Cooperative Programs for Transition from School to Work (Ballantyne et al. 1985) summarizes the reports from field visits of nine interdisciplinary training programs and also compares the various program elements in a general discussion of findings and trends. In addition, Youthwork (1980) describes model programs for disadvantaged youth, including programs involving career information and guidance, academic credit for work experience, private sector involvement and special efforts for high incidence youth. Ashby and Bensberg (1981) present 10 exemplary programs selected with the help of an advisory committee of federal and state officials responsible for administering special education, vocational education, and vocational rehabilitation programs. A final publication (Campbell-Thrane 1979) presents 16 site visit reports and abstracts of another 121 programs for all categories of special needs youth.

All of these models involve a high degree of commitment from the disciplines involved. In some cases, this commitment was spearheaded by the formulation of state-level interagency agreements. In other cases, the interdisciplinary cooperation began at the local level and worked its way up to state agencies. The roles of the involved agencies also differ from program to program, with vocational education playing a very active role in a number of these programs.

Implications

The research clearly demonstrates that interpersonal skills, job-related academic skills, and specific vocational skills are all critical for the successful transition of special needs youth from school to the world of work. The previous sections have outlined the role that the discipline of vocational education can play in this transition, in cooperation with special education, vocational rehabilitation, Job Training Partnership Act agencies, and other adult service providers. Specifically, the suggested roles include the following:

- Assisting special education or vocational special needs personnel in the initial and ongoing assessment of the learner in terms of interests, interpersonal skills, job-related academic skills, and specific vocational skills
- Providing settings for additional exploration through basic vocational education classes such as industrial arts and home economics, as well as exploratory experiences in a sampling of vocational education classes at the high school or postsecondary level
- Working with special education or special needs personnel in instruction in job-related academic skills
- Providing instruction in job-related interpersonal skills in real-life situations using laboratory or on-the-job experience components of the vocational education program
- Training in clusters of vocationally related skills, such as use of specific tools or basic procedures found in a number of occupations
- Providing work experience or on-the-job training and placement
- Training in specific vocational skills

Although some of these roles mesh closely with the tasks vocational educators have been performing for years, their more active participation in vocational assessment and instruction in job-related academic and interpersonal skills requires abilities that current vocational educators may not possess. In addition, the emphasis on interagency cooperation requires at least a familiarity with the other agencies and the services they have to offer. Specifically, the roles proposed in this monograph hold implications for a number of areas including personnel preparation, research, policy setting and planning, and programming. Some of the implications for each of these areas will be presented in the following sections.

Implications for Personnel Preparation

Effective transition requires substantial changes in personnel preparation programs, not only for vocational educators, but for special educators, vocational rehabilitation counselors, and adult service agency personnel. Vocational educators must be better prepared to deal with the special needs learner, not only in adapting the vocational curriculum, but through instruction in job-related academic and interpersonal skills. The skills needed by the vocational educator would include the following areas: (1) skills in individualizing instruction; (2) skills in teaching job-related academic and interpersonal skills; (3) basic competencies in collecting assessment data related to student performance; (4) an understanding of the different disciplines involved in the transition process; and (5) an understanding of the individualized planning process and their role in this process.

Changes must also occur in personnel preparation programs for special educators. Many special educators teaching in our high schools were prepared in elementary education (Halpern 1985) and consequently are oriented toward academic remediation (Wiederholt 1978). Many are not familiar with the skills that the vocational educator has to offer or the requirements of the world of work and vocational training programs. In addition, programs preparing rehabilitation counselors and other adult service agency personnel must include content related to the programming models and goals of vocational training at the secondary level, as well as an orientation to other disciplines involved in the transition process.

Cooperative personnel preparation programs at the undergraduate and graduate level, jointly established and administered by special education, vocational education, and vocational rehabilitation, offer distinct advantages in providing the knowledge and experience needed to design and implement the interdisciplinary transition process. Fortunately, these programs appear to be increasingly available at the preservice level (Sitlington and Malouf 1982). Inservice training also needs to be conducted to supplement the competencies of personnel already in the field and to inform professionals of emerging models and practices.

Implications for Research

Although a healthy start has been made toward understanding and anticipating the needs of special needs learners as they make the transition to employment and postsecondary training environments, additional research is needed. Okolo and Sitlington (1986) recommended research in four areas related to the development and dissemination of more effective transition practices related to learning disabled adolescents. These recommendations are relevant for all special needs youth. First, research regarding the skills needed for success in the environments encountered on the job and in daily living must extend beyond the school walls into the workplace. These data would assist vocational educators in prioritizing the skills most needed by special needs adolescents as they make the transition to adult life. Second, the efficacy of specific interventions, such as instruction in interpersonal and job-related academic skills, must be scrutinized closely. Since graduation from high school marks the end of a formal academic career for many special needs learners, the need for intensive and potent interventions is critical. Researchers must evaluate not only the short-term effects of these interventions, such as the mastery of discrete instructional objectives, but also longer term effects, such as the use and relevance of newly acquired skills and behaviors in employment and postsecondary training settings.

Third, the area of interagency linkages and delivery sequences needs to be investigated, including barriers to effective cooperation and policy concerns. Finally, longitudinal research is necessary for determining the relationship between job-related academic, interpersonal, and specific vocational skill instruction and the adult adjustment of special needs learners. In particular, qualitative research methods, such as those employed by Edgerton and his colleagues in their in-depth case studies of the adult adjustment of mentally retarded persons (Edgerton 1967; Edgerton and Bercovici 1976) would supplement and enrich the quantitatively-oriented data base that is now emerging.

Implications for Policy Determination

The roles that have been suggested for vocational educators involve an increased time commitment on their part in programming for the special needs learner. Such changes in time demands are made possible only through dealing with policy-related issues, including administrative, organizational, or fiscal problems. Greenan and Phelps (1982) surveyed directors of vocational education and special education from each of the 50 states, along with consultants responsible for vocational special needs education, with a final response rate of 62 percent. The findings of this study revealed eight areas identified as problem areas confronting state education agency personnel: interagency cooperation and agreements; funding and fiscal policy; service delivery and program alternatives; personnel preparation; state legislation, plans, and regulations; program evaluation and improvement; and attitudes. Although the directors were not asked to prioritize the policy-related problems, over 50 percent of the problems fell into two areas: (1) interagency cooperation and agreements and (2) funding and fiscal policy. This indicates that the delivery of appropriate vocational education programs is to some extent limited by inadequate federal, state, and local funds. Second, inadequate funding policies and formulas and coordination between agencies regarding funding is perceived as a major problem.

Implications for Programming for Special Needs Learners

The roles proposed for vocational educators also hold implications for program planning and implementation. The implementation of competency-based programming in regular vocational education can greatly aid the integration of the special needs learner into ongoing vocational training programs, as well as enhance the learning of students who are not classified as special needs learners. Such competency-based curriculum allows the special needs learner to progress as far as possible through the regular vocational curriculum; it also indicates to the potential employer the specific skills the learner has mastered.

The second program-related area is that of the involvement of the vocational educator in the Individualized Educational Planning (IEP) process. If the vocational educator is to be more directly involved in the instruction of job-related academic and interpersonal skills, he/she must be more involved in the planning process for the student. This will involve releasing the vocational education teacher for IEP conferences and training special education and vocational education personnel to work cooperatively in the assessment, planning, and implementation phases.

The third area is that of interagency cooperation in transition planning. This process will not come easily even if each agency is fulfilling its role. Perhaps two components are needed here.

First, a formal transition planning process should be developed, including an actual transition planning form. For handicapped learners, this Individualized Transition Plan (ITP) would be completed in addition to the Individualized Education Plan (IEP) and developed in the IEP conference as the student begins the sophomore or junior year. This ITP would focus on the *process* of transition, including identifying the services the student will need to make the transition to the world of work and who might be in the best position to provide them.

The second component that will be needed is someone to assume the leadership role in convening the transition team and ensuring that the transition plan is implemented and modified, if necessary. For the handicapped learner, the initiator would logically be the special education teacher. The vocational rehabilitation counselor, however, should assume the role of monitoring as the student prepares to leave school. For the disadvantaged learner, however, the appropriate person is more difficult to identify. A special needs coordinator, if available, could assume this role. If such a person does not exist at the secondary level, then perhaps the role of initiator should fall on the appropriate postsecondary vocational education program or on Job Training Partnership Act agencies.

In all cases interagency cooperation will be most effective if the focus remains on the needs of the special needs individual and the services that are available to meet those needs. Vocational education has much to offer in the preparation of the special needs learner for the transition to the world of work. Personnel preparation programs, research efforts, and policy changes can foster the development of programming efforts that encourage the vocational educator to become more involved in the transition process.

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